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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,906	11/20/2001	Randall K. Morse	GCSD-1167 (51218)	9204

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EXAMINER	
VALENTIN, JUAN D	

ART UNIT	PAPER NUMBER
2877	

DATE MAILED: 08/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/988,906	MORSE ET AL.	
	Examiner	Art Unit	
	Juan D Valentin II	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14 and 16-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14 & 16-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

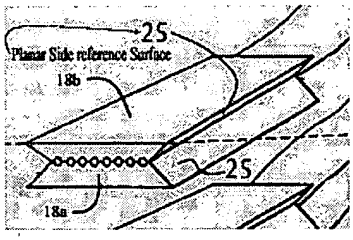
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1- rejected under 35 U.S.C. 103(a) as being unpatentable over Naghski (USPN '767 B1).

Claim 1

Naghski discloses in conjunction with Figs. 1, 2, & the picture included below, an optical connector adapter 10 for interfacing waveguide devices comprising a substrate 18a & 18b for transporting optical signals and having opposing ends, a substantially planar top reference surface formed as an optically flat polished surface, and including at least of an implanted waveguide, deposited silica waveguide, and precision grooves at the top reference surface and defined by semiconductor masking, a substantially planar single lithographically defined side reference surface (angled edges) 25 (Applicant has not defined a single lithographically defined side reference surface in the originally filed specification, therefore it is the position of the Office that the side reference surface (angled edges) 25 of each ferrule half (18a & 18b) as disclosed by Naghski reads on the claimed limitation), a carrier bracket 19 received over the top reference surface at either end of the substrate 18, and including substrate alignment fiducials 17 for aligning the top



and side reference surfaces of the substrate relative to the carrier bracket 14 & 19, and a substrate carrier 11 that receives said substrate and carrier bracket and having carrier alignment fiducials 12 for aligning the side reference surface and top reference surface of the substrate relative to the substrate carrier and carrier bracket for interfacing waveguide devices thereto (col. 3, line 25-col. 4, line 67).

Claim 2

Naghski discloses an optical connector adapter wherein said substrate 18 comprises a waveguide substrate having waveguides 20 implanted within said top reference surface. The limitation of being "defined by precision semiconductor masking" is a process limitation that has not been specially defined within the originally filed specification and adds no further structural features to the product claim and are therefore irrelevant.

Claim 3

Naghski discloses an optical connector adapter wherein said substrate 18 comprises a semiconductor waveguide substrate having silica waveguides 20 deposited on said top reference surface (col. 4, lines 18-28). The limitation of being "defined by precision semiconductor masking" is a process limitation that has not been specially defined within the originally filed specification and adds no further structural features to the product claim and are therefore irrelevant.

Claim 4

Naghski discloses an optical connector adapter wherein said substrate 18 comprises a substrate holder having a plurality of precision grooves formed within said top reference surface (col. 4, lines 23-28). The limitation of being "defined by

semiconductor masking techniques" is a process limitation that has not been specially defined within the originally filed specification and adds no further structural features to the product claim and are therefore irrelevant.

Claim 5

Naghski discloses an optical connector adapter optical connector adapter wherein said substrate holder is formed from one of silicon or glass (col. 4, lines 18-23).

Claim 6

Naghski discloses an optical connector adapter wherein said substrate holder comprises one of a molded silica resin composite or ceramic (col. 4, lines 20-24). Naghski is silent with regards to silicon being a molded resin. It is obvious to someone of ordinary skill in the art that silicon is a form of molded silica resin, therefore reading on Applicants claimed limitation.

Claims 7 & 12

It would have been obvious to someone of ordinary skill in the art at the time of the claimed invention to provide a precision polished optically flat reference surface in order to insure maximum light coupling between the fibers within the connector and the device it is to be mated with. The limitation of "said side reference surface comprises a lithographically defined and formed precision reference surface" is a process limitation that has not been specially defined within the originally filed specification and adds no further structural features to the product claim and are therefore irrelevant.

Claims 8 & 13

Naghski discloses an optical connector adapter wherein said substrate comprises a molded substrate and wherein said substrate alignment fiducials comprise alignment pins

on which the top and side reference surfaces engage (col. 4, lines 20-24, Fig. 2, ref. 16). Naghski is silent with regards to silicon being a molded substrate. It is obvious to someone of ordinary skill in the art that silicon is a form of molded silica, therefore reading on Applicants claimed limitation. Further, the limitation of "a molded substrate having precision molded top and side reference surfaces" is a process limitation that has not been specially defined within the originally filed specification and adds no further structural features to the product claim and are therefore irrelevant. Nagnski discloses a substrate (ferrule) 18 which reads on Applicants claimed limitations of having top and side reference surfaces.

Claims 16-18

MPEP § 2113 Product-by-Process Claims

PRODUCT-BY-PROCESS CLAIMS ARE NOT LIMITED TO THE MANIPULATIONS OF THE RECITED STEPS, ONLY THE STRUCTURE IMPLIED BY THE STEPS

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted) (Claim was directed to a novolac color developer. The process of making the developer was allowed. The difference between the inventive process and the prior art was the addition of metal oxide and carboxylic acid as separate ingredients instead of adding the more expensive pre-reacted metal carboxylate. The product-by-process claim was rejected because the end product, in both the prior art and the allowed process, ends up containing metal carboxylate. The fact that the metal carboxylate is not directly added, but is instead produced in-situ does not change the end product.).

>The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. See, e.g., In re Garnero, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979) (holding "interbonded by interfusion" to limit structure of the claimed composite and noting that terms such as "welded," "intermixed," "ground in

place," "press fitted," and "etched" are capable of construction as structural limitations.)<

ONCE A PRODUCT APPEARING TO BE SUBSTANTIALLY IDENTICAL IS FOUND AND A 35 U.S.C. 102 /103 REJECTION MADE, THE BURDEN SHIFTS TO THE APPLICANT TO SHOW AN UNOBVIOUS DIFFERENCE

"The Patent Office bears a lesser burden of proof in making out a case of prima facie obviousness for product-by-process claims because of their peculiar nature" than when a product is claimed in the conventional fashion. In re Fessmann, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983) (The claims were directed to a zeolite manufactured by mixing together various inorganic materials in solution and heating the resultant gel to form a crystalline metal silicate essentially free of alkali metal. The prior art described a process of making a zeolite which, after ion exchange to remove alkali metal, appeared to be "essentially free of alkali metal." The court upheld the rejection because the applicant had not come forward with any evidence that the prior art was not "essentially free of alkali metal" and therefore a different and unobvious product.).

Ex parte Gray, 10 USPQ2d 1922 (Bd. Pat. App. & Inter. 1989) (The prior art disclosed human nerve growth factor (b-NGF) isolated from human placental tissue. The claim was directed to b-NGF produced through genetic engineering techniques. The factor
produced seemed to be substantially the same whether isolated from tissue or produced through genetic engineering. While the applicant questioned the purity of the prior art factor, no concrete evidence of an unobvious difference was presented. The Board stated that the dispositive issue is whether the claimed factor exhibits any unexpected properties compared with the factor disclosed by the prior art. The Board further stated that the applicant should have made some comparison between the two factors to establish unexpected properties since the materials appeared to be identical or only slightly different.).

THE USE OF 35 U.S.C. 102 /103 REJECTIONS FOR PRODUCT-BY-PROCESS CLAIMS HAS BEEN APPROVED BY THE COURTS

"[T]he lack of physical description in a product-by-process claim makes determination of the patentability of the claim more difficult, since in spite of the fact that the claim may recite only process limitations, it is the patentability of the product claimed and not of the recited process steps which must be established. We are therefore of the opinion that when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art

products and make physical comparisons therewith." In re Brown, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

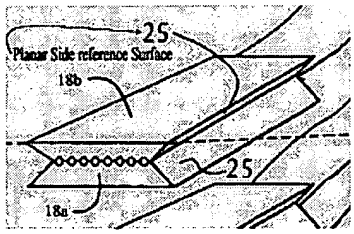
In the present application, Naghski discloses an alingnment chip, which is an equivalent to Applicants bracket which helps secure the substrate in a substrate carrier. Further, Naghski discloses forming the plurality of grooves on a lithographically formed precision surface (col. 4, lines 6-24).

Claims 9, 10, 14, & 32

Naghski discloses an optical connector adapter wherein an alignment pin 16 is set within each carrier bracket such that an alignment pin is positioned tangent to the top and side reference surfaces and alignment pins further positioned within said carrier bracket for aligning a waveguide device thereto (col. 4, lines 47-67).

Claim 11

Naghski discloses in conjunction with Figs. 1 & 2, an optical connector adapter 10 for interfacing waveguide devices comprising a substrate holder 18 having opposing ends, a substantially planar top reference surface formed as an optically flat polished surface and a substantially planar single side reference surface (angled edges) 25 (Applicant



has not defined a single lithographically defined side reference surface in the originally filed specification, therefore it is the position of the Office that the side reference surface (angled edges) 25 of each ferrule half (18a & 18b) as disclosed by Naghski reads on the claimed limitation), said top reference surface having a plurality of grooves formed therein for receiving optical fiber 20 and spaced a predetermined distance from the side reference surface, a carrier bracket 14 & 19 received over the top reference surface at

either end of the substrate holder, and including substrate alignment fiducials 17 for aligning the top and side reference surfaces of the substrate holder relative to the carrier bracket 14 & 19, and a substrate carrier 11 that receives said substrate holder and carrier bracket and having carrier alignment fiducials 12 for aligning the side reference surface and top reference surface of the substrate holder relative to the substrate carrier and carrier bracket and aligning any optical fiber 20 received within the grooves on the top reference surface with waveguide devices (col. 3, line 25-col. 4, line 67).

Claim 15

Naghski discloses an optical connector adapter further comprising alignment pins 16 positioned within said carrier bracket for aligning a multichannel waveguide device connected thereto relative said top and side reference surfaces (col. 4, lines 46-67).

Claims 19-21

Naghski discloses parallel grooves, a substrate (ferrule) which is rectangular configured, and top and side reference surfaces orthogonal to each other (Fig. 2, refs. 18 & 25).

Claims 22 & 23

It is obvious within the field of optical fiber ribbon connectors to use grooves dimensioned for both single mode and multi-mode optical fibers (col. 1, lines 36-45).

Claim 24

The method as claimed can be performed by using the apparatus of Naghski as shown in rejected claim 1.

Claims 25, 26, & 27

Naghski discloses a method further comprising the step of forming the substrate as waveguide substrate having waveguides implanted within said top surface and defined by precision semiconductor masking or forming the substrate as a semiconductor waveguide substrate having silica waveguides deposited on said top surface and defined by precision semiconductor masking or forming the substrate as substrate holder having a plurality of precision grooves formed within said top surface and defined by semiconductor masking techniques (col. 4, lines 3-28).

Claims 28 & 31

Naghski discloses a method further comprising the step of aligning the carrier brackets on the top reference surface using alignment pins (Fig. 2, refs. 16, 19, and 18).

Claim 29

The method as claimed can be performed by using the apparatus of Naghski as shown in rejected claim 11.

Claim 30

Naghski discloses a method further comprising the step of aligning the carrier brackets on the top reference surface using alignment pins (Fig. 2, refs. 16, 19, and 18).

Response to Arguments

2. Applicant's arguments filed 06/01/2004 have been fully considered but they are not persuasive.

In response to Applicants arguments with regards to independent claims 1, 11, 24, & 29 submitted in the Remarks section dated 6/01/2004, Examiner notes that in the last

paragraph of page 10, Applicant argues that the present invention includes a single substrate. While Applicants invention only uses a single substrate, the claim merely discloses an optical connector comprising a substrate; Naghski discloses this claimed limitation (col. 4, lines 20-23) with regards to the bottom portion 18a of ferrule 18 including precision grooves at a top reference surface. It is obvious to someone of ordinary skill in the art at the time of the claimed invention that in the art of fiber optic interconnect systems, precise alignment of fibers is needed in order to achieve maximum coupling efficiency at optical interconnect nodes. This especially holds true when the density of connection points increases within a single interconnection node (col. 2, lines 3-9). Therefore, it is obvious that optical connectors in general, including that of Naghski, will have optically polished reference surfaces and precision grooves to align/hold the optical fibers in order to maintain the stringent tolerances necessary to insure the most efficient coupling of information through optical connectors. Applicant further argues that the side reference surface (angled edges) is not lithographically defined, Examiner points to (col. 4, lines 3-17) of Naghski, especially lines 6-9, where Naghski teaches that "mask openings may be formed by **standard photolithographic techniques** to expose the areas of the silicon where the grooves 15 will be etched". While Naghski's discussion is towards the formation of the grooves 15 within the alignment pin 14 in Fig. 1, it is well known and would have been obvious to someone of ordinary skill in the art at the time of the claimed invention to use the same photolithographic techniques disclosed by Naghski to form the side reference surface (angled edges) 25 using these same techniques in order to provide highly accurate alignment of the ferrules 18 to the alignment pins 14 (col. 4, lines 29-44). In response to

Applicants argument on page 11, second paragraph, that Naghski does not disclose reference surfaces, it is the position of the Office, that the top surface of the lower ferrule 18a indeed does form a reference surface with that of the bottom surface of upper ferrule portion 18b, therefore reading on Applicants claimed limitation. It is further noted that both upper and lower ferrule portions contain a planar single side surface 25 which act as reference surfaces used to cooperate with ridges 17 and grooves 15 of the alignment pins 14 (Fig. 2). In the broadest interpretation of the claims, Naghski as applied above reads on Applicants claimed limitations.

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan D Valentin II whose telephone number is (571) 272-2433. The examiner can normally be reached on Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Juan D Valentin II
Examiner 2877
JDV
August 10, 2004

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